JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY VOL. 65, NO. 21, 2015

ISSN 0735-1097/$36.00
PUBLISHED BY ELSEVIER INC. http://dx.doi.org/10.1016/j.jacc.2015.04.016

FELLOWS-IN-TRAINING & EARLY CAREER PAGE

A Call for Collaboration

The Evolving Heart Failure Apprenticeship Network

Anuradha Lala, MD,* Robert J. Mentz, MD†

"If everyone is moving forward together, then success takes care of itself."
—Henry Ford (1)

The landscape of research in cardiovascular medicine has changed dramatically from the days of lone scientists working in secluded ivory towers. Effective clinical research today thrives on collaborative efforts that cross institutional and geographic boundaries. Yet, as early career physicians, we are so accustomed to trying to stand out from our colleagues to present, publish, and secure jobs, that at times it may seem as if there are few opportunities to achieve academic synergy. Thus, we may miss not only how fun it is to work together, but also how much we stand to learn from one another.

Earlier this year in the *Journal*, Drs. Matthew Tomey and Tara Naib (2) shared their experience of working in the American Heart Association Fellows' Society of New York, founded by Dr. Valentin Fuster in 1989. They urged fellows to "build connections beyond institutional walls" to effect change, build social capital, and educate. Having been involved in this society, we bore witness to the infectious energy created when members united from across 12 local hospitals to generate new ideas for educational programs, policymaking, and community service. Individual accomplishments represented success for the fellows' society as a whole. In their eloquent essay, Tomey and Naib (2) suggest interinstitutional collaboration for the purposes of clinical research as an essential next step.

The Heart Failure Apprentice Network (HFAN) is one such organization to have recently developed. Comprised of heart failure fellows and junior faculty interested in clinical research careers, and supported by the National Heart, Lung, and Blood Institute (NHLBI), HFAN is an ancillary enterprise to the parent Heart Failure Network (HFN), which is well recognized for conducting clinical trials in heart failure. Under the apprenticeship of senior Network investigators, HFAN members engage in a comprehensive clinical research experience that includes 4 key elements: 1) site-based research as members of a clinical trial team; 2) development of hypothesis-based analyses of new trial databases; 3) conception and launch of prospective pilot studies; and 4) cultivation of a synergistic group-based dynamic to advance the understanding of heart failure.

SITE-BASED RESEARCH AND SERVING ON A CLINICAL TRIAL TEAM

As trainees, it is easy to gloss over the methods section of a paper without considering how much work is involved in the design and conduct of a clinical trial. Participation in real-world, site-based research activities involves protocol development, regulatory submissions, patient recruitment, data collection, reporting of adverse effects, and summarizing interim results for the Data Safety Monitoring Board and Network participants. The ability to organize, perform, and manage the clinical, scientific, regulatory, and financial considerations of site-based research requires substantial expertise that is often not appreciated in a classroom setting. Thus, "hands- on" training by way of actually serving on a multidisciplinary research team is indispensable in understanding many of these processes, including the protection of human subjects, research involving vulnerable populations, informed consent, database research, good clinical practice, and Health Insurance Portability and Accountability Act regulations. Participation in steering committee meetings through presenting proposals and data allows us to witness firsthand the effective communication, teamwork, and organization required to ensure productivity. Observing how

From the *Zena and Michael A. Wiener Cardiovascular Institute, Icahn School of Medicine at Mount Sinai, New York, New York; and the †Duke Clinical Research Institute, Duke University Medical Center, Durham, North Carolina. The Heart Failure Apprentice Network is supported by the following National Heart, Lung, and Blood Institute training grants: U10 HL110337, U10 HL110262, U10 HL110309, and U10 HL110312.

personal and political dynamics unfold at different levels provides additional insight as to how a successful clinical research team operates.

DEVELOPMENT OF HYPOTHESIS-DRIVEN INVESTIGATIONS

As members of HFAN, we are uniquely positioned to answer clinically relevant questions by interrogating the Network's well-characterized trial datasets. Statistical analysis plans are prepared by HFAN members in conjunction with a faculty mentor and statistician and undergo review by an internal ancillary studies committee. Once data are obtained and requested analyses are completed by the HFN statistical team, the HFAN lead author and collaborators drive the projects to completion by promulgating the findings in the form of presentations at national meetings and scientific publications (3). Working together to analyze and interpret data, write scientific papers, as well as generate new questions and ideas has afforded opportunities for us to engage with one another beyond institutional borders.

CONCEPTION AND LAUNCH OF NEW ANALYSES AND PILOT STUDIES

Although conducting retrospective analyses are fruitful, we also want to focus our energies on understanding what questions *need* to be answered, rather than what questions *can* be answered by the data already collected. Therefore, the development of prospective investigations as ancillary studies of proposed Network trials are also strongly encouraged. Recently, the HFAN completed RED-ROSE (Reliable Evaluation of Dyspnea in the ROSE study) (NCT01132846), an ancillary ROSE-AHF (Renal Optimization Strategies Evaluation–Advanced Heart Failure) study designed to assess novel symptom assessment tools in advanced heart failure. Results of this prospective study were the basis of 2 oral abstract presentations at the 2014 American College of Cardiology scientific sessions (4,5), and the manuscripts are currently under peer review. Collaboration for such studies is promoted through cross-institutional visits to share progress and acquire additional research skills, in addition to regular conference calls and e-mail exchange.

CULTIVATION OF A SYNERGISTIC GROUP-BASED DYNAMIC

Perhaps the most valuable aspect of HFAN has been discovering what it really means to "play nice in the sandbox" at this stage in our careers. Several key lessons have been gleaned along the way:

1. *Competition for acknowledgment undermines group cohesion and momentum.* The hunger for individual credit must be replaced with the cultivation of an environment of shared recognition.
2. Although the group provides structure and inspiration, *efficiency and progress are contingent upon an individual or pair of individuals taking primary responsibility for each project.* Roles rotate to allow every member to enrich his or her skills in the various aspects of seeing a project to completion: leadership of calls, meetings, brainstorming, record keeping, data gathering and analysis, writing, and presenting, among others.
3. Much like a family, *small tensions and disagreements are inevitable.* We operate on the assumption that all issues can and will be resolved, prioritizing group morale, enthusiasm, and effective conflict resolution.
4. *At each stage, it is still helpful to have cross-institutional mentorship to review decisions about design, style, and authorship to provide constructive criticism where needed.*

MENTORSHIP

Active and involved mentorship is critical for the development of any successful clinician scientist and educator. Although mentorship is most commonly sought at the early career stage, we see this holds true at all levels, regardless of stature or age. In general, HFAN stresses a "team mentoring" approach within a collaborative multidisciplinary atmosphere. A senior investigator is assigned to each trainee at the time of entry into the program to guide the trainee's research and professional development. This relationship is supplemented by other individuals with specific expertise (e.g., biostatistics or genomics) as needed. Through processes of clinical trial work, ancillary studies, data collection, writing, and critiquing, HFAN affords access to feedback and extramural mentorship from all of the HFAN advisors, many of whom are renowned leaders across the United States. Aside from guidance for specific tasks and projects, the counsel received from these seasoned academic physicians regarding job searches, the daunting transition from fellow to faculty, and the struggle of finding a "work-life balance" is particularly useful.

In today's challenging economic climate, it is uplifting to witness the NHLBI's commitment to the development of future leaders in HF. Key tangible metrics of the program include helping trainees to pursue academic careers, disseminate research, and obtain grant support. To date, more than 75%

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of HFAN trainees have gone on to practice at academic institutions, many with ongoing NIH-funded research. The group has presented 10 abstracts, with the majority of these converted into manuscripts, which are currently under review or published.

Reflecting upon our involvement in this remarkable program over the past 2 years, we are challenged to define what success means for us. On a basic level, success lies in the acquisition of skills in research, performance, and communication. The larger measure of success, however, is the establishment of a cohesive consortium of like-minded individuals dedicated to the lifelong endeavor of heart failure research. We have witnessed how much friendship senior investigators within the Network share, clearly developed over years of collaboration, and a key part of what keeps them interested in the field. Having gained so much from working with one another in such a short time period, we only stand to learn and grow more in support of each other's careers as time goes on. The formation of HFAN called for a shedding of an acquired sense of competition, replacing it with a desire for a collaborative collective. If we as early career physicians can continue to form such networks whereby the field of academic medicine can be advanced and we all move forward together, success is bound to "take care of itself."

REPRINT REQUESTS AND CORRESPONDENCE: Dr. Anuradha Lala, The Zena and Michael A. Wiener Cardiovascular Institute, Icahn School of Medicine at Mount Sinai, 1 Gustave Levy Place, Box 1030, New York, New York 10029. E-mail: anu.lala@mountsinai.org.

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RESPONSE: Research Networks = Shared Sacrifice and Success

Sean P. Pinney, MD
The Zena and Michael A. Wiener Cardiovascular Institute, Icahn School of Medicine at Mount Sinai, New York, New York
E-mail: sean.pinney@mssm.edu

> *"It is amazing what you can accomplish if you do not care who gets the credit."*
> —Harry S. Truman (1)

It is easy to embrace this simple aphorism of placing the good of positive action ahead of one's desire for recognition. It is much more difficult to put it into motion. Nevertheless, it appears that the Heart Failure Apprenticeship Network (HFAN) is succeeding in doing just that. In the spirit of collaboration, they have created a collection of young trialists who view their individual successes as being subordinate to and intertwined with the success of the group as a whole. Although this concept of teamwork is not new to academic medicine, the fact that it has so rarely been demonstrated bears further exploration.

The success of HFAN rests on 5 pillars. The first of these is *mentorship,* which is generously provided by experienced academicians who invest their time in nurturing the careers of future leaders. The second is *trust* between the members that in sharing recognition they will not sacrifice their day in the limelight, it will eventually come. Third is the *belief in a common good,* that through their collective efforts they will be improving the lives of heart failure patients. Fourth is a *thirst for new knowledge*, a quest that drives all curious investigators. Finally, there is the shared value of *hard work,* which is a reward in and of itself.

It is unlikely to be a coincidence that this successful model of collaboration is emerging at this time. Health care as a whole, along with its academic circles, are being

refashioned into integrated networks. These dynamic new systems place efficiencies and outcomes above individual achievement. Performance metrics and improvement cycles are replacing some of the romantic images of the not-so-distant past. Soon academic medicine may lose the image of the great physician-leader who is the repository of vast knowledge and who stands head and shoulders above his or her peers. So, too, may be sacrificed the image of the brilliant lone investigator who toils away in relative isolation between discoveries. Replacing these iconic images will be that of a dimensionless network, but so be it. The results from such collaborations will far exceed that of any 1 individual.

Having had a chance to work with and interact with several of the young HFAN members, I can say that the future looks very bright. Their motivations are no different than those that drew so many into academic medicine. These timeless values give shape to our academic landscape and ensure that in the future-present of networks, there will always be a ghost within the machine.

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